

Descriptions of Two New Species of Eriophyid Mites (Acari: Prostigmata: Eriophyidae) Common in Greece and Serbia

ELENI G. MALANDRAKI, RADMILA U. PETANOVIC,¹ AND NIKOLAOS G. EMMANOUEL

Agricultural University of Athens, Laboratory of Agricultural Zoology and Entomology, Iera Odos 75, 118 55 Athens, Greece

Ann. Entomol. Soc. Am. 97(5): 877-881 (2004)

ABSTRACT Two new species of mites in the family Eriophyidae, *Calepitrimerus crataegi* sp. nov. collected from *Crataegus* spp. and *Platyphytoptus juniperi* sp. nov. collected from *Juniperus oxycedrus* L. and *Juniperus communis* L., are described and illustrated.

KEY WORDS Eriophyidae, *Calepitrimerus*, *Platyphytoptus*, systematics, *Crataegus*, *Juniperus*

TWO NEW SPECIES OF eriophyid mites, common in Greece and Serbia, are described: *Calepitrimerus crataegi* sp. nov. and *Platyphytoptus juniperi* sp. nov. *C. crataegi* was found on *Crataegus monogyna* Jacq., *Crataegus orientalis* Pall, and *Crataegus laevigata* (Poir) DC., whereas *P. juniperi* was found on *Juniperus oxycedrus* L. and *Juniperus communis* L.

The terminology and setal notation in the descriptions follow Lindquist (1996) and Baker et al. (1996). Measurements of holotype and range of paratypes (in parentheses) are given in micrometers and refer to the length of the structure, unless otherwise stated. Body length is measured from the anterior edge of the prodorsal shield to the end of the anal lobe. Length of the legs is taken from the posterior edge of trochanter to the end of tarsus (excluding empodium and solenidion).

Genus *Calepitrimerus* Keifer 1938

C. crataegi sp. nov.

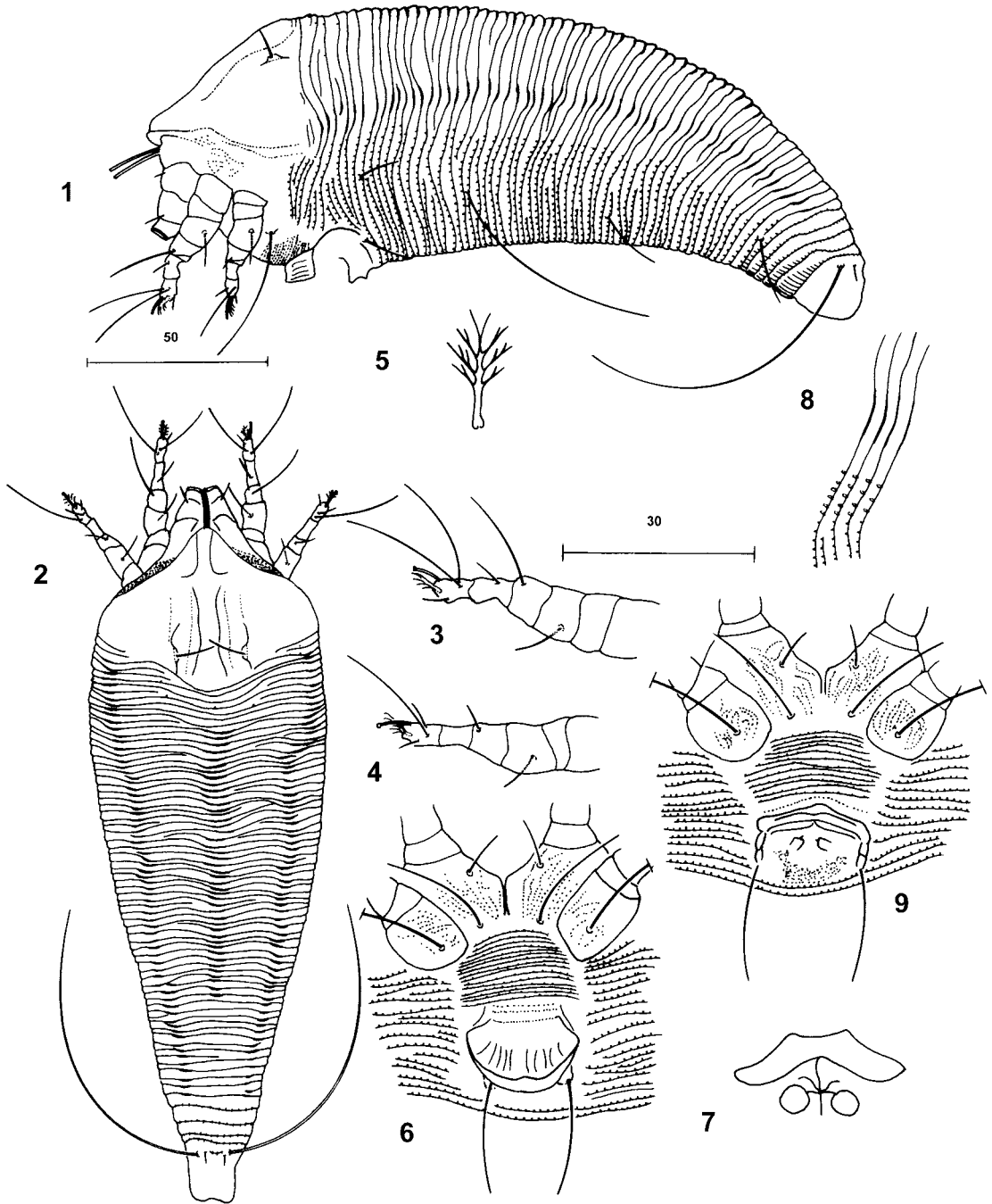
(Figs. 1, 2, 3, 4, 5, 6, 7, 8, and 9)

Female ($n = 9$). Body spindleform, 192 (158-192), 76 (67-71) wide, light orange. Gnathosoma: 19 (17-22), downcurved. Coxal setae (*ep*) four (4-5), dorsal genual setae (*d*) seven (8), subapical setae (*v*) three (2-3), cheliceral stylets 18 (15-17). Prodorsal shield: 48 (46-51), 65 (62-71) wide, subtriangular, with a prominent lobe 11 (8-11). Prodorsal shield only with a median ridge and the faint remnants of the admedian lines on the lobe. Dorsal tubercles well developed, near the posterior margin of the shield, scapular setae (*sc*) 11 (8-11), 20 (16-21) apart, directed centrad. Legs: With all usual segments and setae. Legs I 32 (27-31), femora eight (8-9), femoral setae (*bv*) eight

(8-9), genua six (5-6), genual setae (*l'*) six (5-6), tibiae eight (7-8), tibial setae (*l'*) five (4-5), tarsi seven (6-7), inner fastigial setae (*ft'*) 20 (18-20), outer fastigial setae (*ft''*) 22 (19-22), ventromesal setae (*u'*) five (4-5), solenidia five (5-6), distinctly knobbed, empodia seven (5-7), four-rayed. Legs II 28 (25-28), femora eight (8-9), femoral setae (*bv*) eight (8-10), genua five (4-5) long, genual setae (*l'*) five (5-6), tibiae seven (5-6), tarsi seven (6-7), inner fastigial setae (*ft'*) 5, outer fastigial setae (*ft''*) 21 (18-21), ventromesal setae (*u'*) four (4-5), solenidia seven (5-7), distinctly knobbed, empodia six (5-6), four-rayed. Coxae: Coxae I and II finely granulated. Coxae I not contiguous. Coxal setae *1b* seven (5-9), 14 (12-15) apart, coxal setae *1a* 25 (18-22), eight (8-10) apart, coxal setae *2a* 44 (38-45), 29 (25-28) apart. Coxisternal area with 15 (13-15) slightly, microtuberculated annuli. Genitalia: 17 (15-19), 23 (22-25) wide with 10 (10-12) longitudinal ridges and 2-3 transverse lines of fine granules anteriorly. Coxal setae *3a* 58 (54-58) and 15 (13-15) apart. Opisthosoma: With one central and two lateral ridges, probably wax producing. Central ridge more prominent after seventh annulus, reaches to the 48 (42-50)th dorsal annulus. Dorsal annuli smooth except for a few scattered round microtubercles on the first annuli. Setae *c2* 24 (20-22), 54 (46-51) apart, on annulus four (2-4) setae *d* 58 (56-67), 32 (28-32) apart, on annulus 18 (16-18), setae *e* 21 (16-23), 40 (36-40) apart, on annulus 40 (36-40), setae *f* 27 (22-29), 22 (19-22) apart, on annulus 58 (51-59). Total dorsal annuli 66 (61-72); total ventral annuli 63 (56-64), with round microtubercles on the edge of the annulus, except five terminal annuli striated. Setae *h2* 83 (76-82), eight (7-8) apart, setae *h1* three (2-4), five (4-5) apart.

Male ($n = 2$). Smaller than female, 176 (158-158), 51 (58-66) wide. Gnathosoma: 20 (15-19). Coxal setae (*ep*) three (3), dorsal genual setae (*d*) eight (6), subapical tarsal setae (*v*) two (1-2), cheliceral stylets

¹ University of Belgrade, Faculty of Agriculture, Namanjina 6, P.O. Box 127, 11001 Belgrade, Zemun, Serbia, and Montenegro (e-mail: rpetanov@agrifaculty.bg.ac.yu).



Figs. 1-9. *C. crataegi* n. sp. (1-8, female; 9, male). 1. Lateral view. 2. Dorsal view. 3. Leg I. 4. Leg II. 5. Empodium, enlarged. 6. Coxigenital region. 7. Internal genitalia. 8. Detail of microtubercles on lateral surface. 9. Coxigenital region.

12 (11-12). Prodorsal shield: Similar to female, 48 (44-47), 63 (62-62) wide. Frontal lobe eight (6-9). Dorsal tubercles well developed, near to the rear margin of the shield, scapular setae (*sc*) nine (8), 12 (14-15) apart, directed centrad. Legs: With all usual segments and setae. Legs I 28 (27), femora eight (7), femoral setae (*bv*) eight (7-8), genua 5, genual setae

(*l'*) 18, tibiae seven (6-7), tibial setae (*l'*) five (4-5), tarsi seven (5), inner fastigial setae (*ff'*) 19 (17-18), outer fastigial setae (*ff''*) 21 (17-19), ventromesal setae (*u'*) five (4), solenidia 5, distinctly knobbed, empodia 6, four-rayed. Legs II 27 (26-27), femora 8, femoral setae (*bv*) eight (7-8), genua five (4-5), genual setae (*l''*) six (5), tibiae 5, tarsi seven (5-6), inner fastigial

Table 1. Differences between *C. crataegi* sp. nov. and *C. cariniferus* Keifer

<i>C. crataegi</i> sp. nov. ^a	<i>C. cariniferus</i> Keifer ^b
1. Prodorsal shield with median ridge	1. Prodorsal shield with indistinct design
2. Dorsal annuli smooth	2. Dorsal annuli microtuberculated
3. Lateral ridge beginning from the first tergite	3. Lateral ridge beginning from tergite 7 or 8
4. Coxae I not contiguous	4. Coxae I contiguous
5. Coxisternal annuli 12–15	5. Coxisternal annuli ~7

^a From 13 (10 females and 3 males) specimens.

^b From Keifer (1938) and Keifer's paratypes.

setae (*ft'*) 5, outer fastigial setae (*ft''*) 19 (16–17), ventromesal setae (*u'*) 4, solenidia seven (6), distinctly knobbed, empodia 6, four-rayed. Coxae: Coxae as in female. Coxal setae *1b* eight (5–6), 13 apart, coxal setae *1a* 22 (18–20), nine (8) apart, coxal setae *2a* 40 (42), 28 (25) apart. Coxisternal area with 12 (14) microtuberculated annuli. Genitalia: 15 (13–14), 22 (20–22) wide. Coxal setae *3a* 43 (46), 17 (17–18) apart. Opisthosoma: As in female. Central ridge, reaches to the 36 (34–41)th dorsal annulus. Setae *c2* 16 (15–18), 50 (44–53) apart, on annulus two (2–3), setae *d* 56 (48–54), 33 (30–32) apart, on annulus 13 (15), setae *e* 18 (15–16) long, 13 (11) apart, on annulus 33 (32), setae *f* 24 (22–24), 22 (16–21) apart, on annulus 56 (51–53). Total dorsal annuli 65 (58–59), total ventral annuli 61 (56–58) microtuberculated as in female. Setae *h2* 76 (73–78), seven (7) apart, setae *h1* three (2), four (3–4) apart.

Taxonomic Notes—Diagnosis. *C. crataegi* sp. nov. is similar to *Calepitrimerus cariniferus* Keifer (1938) found on *Artemisia heterophylla* Bess. (Asteraceae). Differentiation between these two species is given in Table 1. This is the second species of *Calepitrimerus* found on *Crataegus*. The first one is *Calepitrimerus armatus* (Canestrini), which according to Keifer (1942, 1952), is deutero-gynous.

Type Material. Holotype female, 10 female paratypes, allotype male and 1 male paratype collected from *Crataegus monogyna* Jacq., 2 female and 1 male paratypes collected from *Crataegus orientalis* Pall. at Neapoli, Kozani Prefecture (Greece) by the first author on 27-V-99. Also two female paratypes collected from *Crataegus laevigata* (Poiret) DC. near the lake Mikri Prespa (Greece) by the first author on 26-V-99. Two female paratypes collected from *C. monogyna* at Vidikovac, Divčibare plateau (Serbia) by the second author on I-XIII-00. Holotype and paratypes are deposited in the Acari Collection, Department of Agricultural Zoology and Entomology, Agricultural University of Athens, Greece; paratypes from Serbia are deposited in the Acari Collection, Department of Entomology, Faculty of Agriculture, University of Belgrade, Serbia and Montenegro. One female paratype each at the British Museum, London, England and the National Museum, Washington, DC.

Relationship to Host Plant. *C. crataegi* sp. nov. was found on both leaf surfaces of *Crataegus* spp. The species is probably a vagrant.

Etymology. The name of the species is derived from the generic name of the host plant.

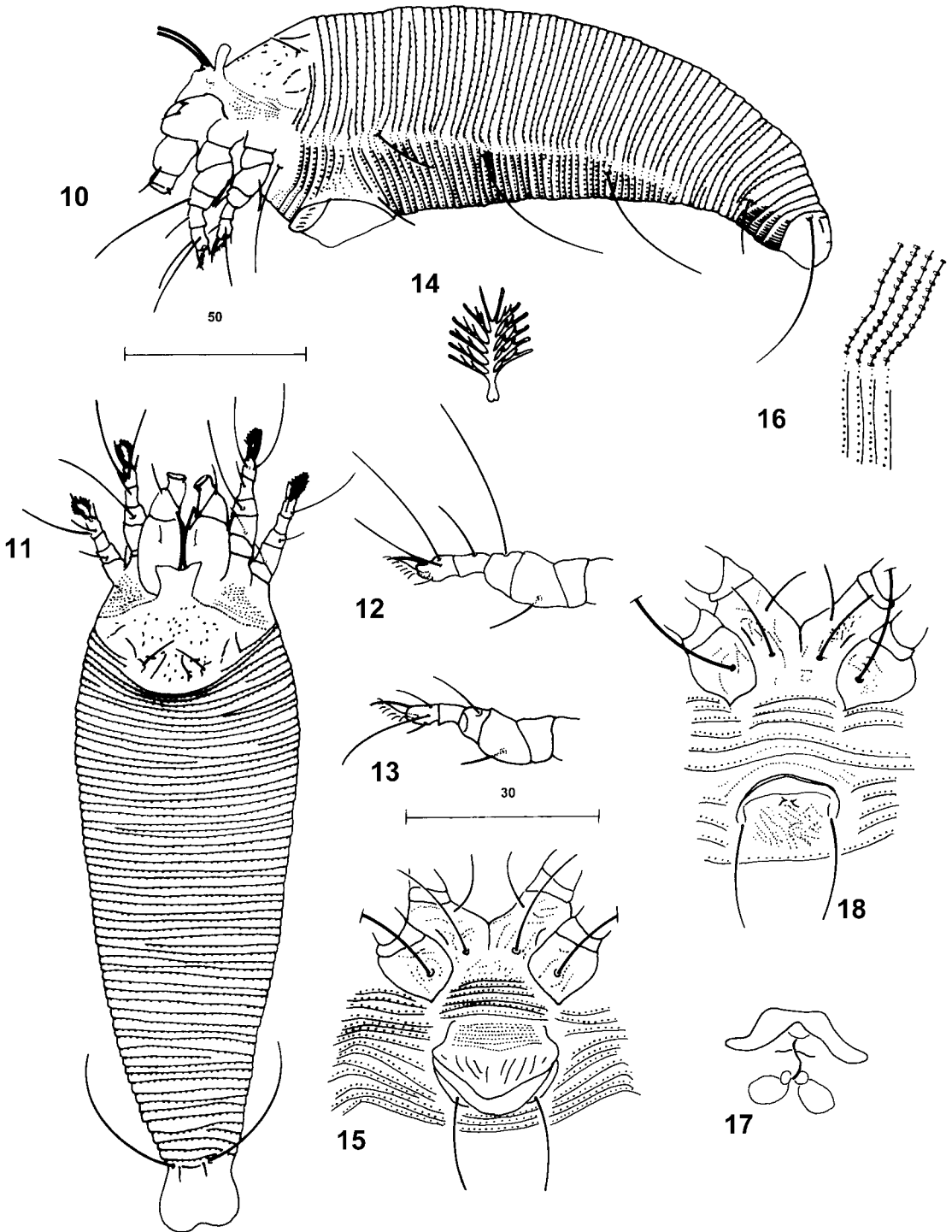
Genus *Platyphytoptus* Keifer 1939

P. juniperi sp. nov.

(Figs. 10, 11, 12, 13, 14, 15, 16, 17, and 18)

Female (*n* = 9). Body fusiform, 186 (149–186), 68 (57–66) wide, light orange. Gnathosoma: 35 (27–31), downcurved. Coxal setae (*ep*) five (4–5), dorsal genual setae (*d*) eight (7–9), subapical setae (*v*) three (2–3), cheliceral stylets 29 (24–27). Prodorsal shield: 36 (32–40), 52 (45–22) wide, subtriangular, with a prominent, emarginate lobe 16 (13–19). Shield pattern consists of two short admedian lines, the length of which just exceeds the dorsal tubercles, and a limited number of scattered heavy granules. Dorsal tubercles well developed, near the posterior margin of prodorsal shield, scapular setae (*sc*) 10 (8–11), 19 (16–20) apart, directed up and centrad. Legs: With all usual segments and setae. Legs I 27 (25–28), femora eight (7–9), femoral setae (*bv*) seven (7–12), genua four (4–5), genual setae (*l'*) 24 (23–31), tibiae six (6–8), tibial setae (*l''*) eight (7–8), tarsi seven (6–7), inner fastigial setae (*ft'*) 20 (18–22), outer fastigial setae (*ft''*) 22 (19–24), ventromesal setae (*u'*) five (7), solenidia eight (7–8), not knobbed, empodia eight (7–9), six-rayed. Legs II 23 (22–26), femora eight (8–9), femoral setae (*bv*) nine (8–9), genua five (4–5) long, genual setae (*l'*) eight (8–12), tibiae five (5–6), tarsi six (5–7), inner fastigial setae (*ft'*) eight (7–8), outer fastigial setae (*ft''*) 22 (20–25), ventromesal setae (*u'*) 5, solenidia eight (7–9), not knobbed, empodia eight (8–9), six-rayed. Coxae: Coxae I and II granulated. Sternal line six (8–9). Coxal setae *1b* seven (7–9), 12 (12–13) apart, coxal setae *1a* 32 (27–31), eight (7–10) apart, coxal setae *2a* 39 (35–41), 24 (21–25) apart. Coxisternal area with six (5–7) microtuberculated annuli. Genitalia: 15 (17–19), 25 (22–25) wide with 10 (8–10) longitudinal ridges, finely granulated anteriorly. Coxal setae *3a* 33 (32–36) and 15 (14–17) apart. Opisthosoma: With faint round microtubercles on the distal edge of the annulus. Setae *c2* 25 (24–31), 64 (45–53) apart, on annulus three (2–3), setae *d* 47 (43–52), 33 (30–35) apart, on annulus 16 (13–18), setae *e* 43 (38–46), 19 (15–19) apart, on annulus 31 (30–38), setae *f* 18 (15–20), 18 (15–18) apart, on annulus 59 (57–59). Total dorsal annuli 61 (53–66); total ventral annuli 52 (55–62), with round microtubercles except four terminal annuli striated. Ventral microtubercles are not on the distal edge of the annulus. Setae *h2* 37 (31–38), 10 (7–10) apart, setae *h1* four (4–5), six (5–6) apart.

Male (*n* = 4). Smaller than female, 162 (118–154), 55 (48–54) wide. Gnathosoma: 28 (23–31). Coxal setae (*ep*) four (3–5), dorsal genual setae (*d*) eight (7–9), subapical tarsal setae (*v*) 2, cheliceral stylets 23 (21–25). Prodorsal shield: Similar to female, 44 (33–35), 44 (43–45) wide. Frontal lobe as in female, seven (8–9). Dorsal tubercles well developed, near the posterior margin of prodorsal shield, scapular setae (*sc*) eight (8–9), 15 (14–16) apart, directed up and centrad.



Figs. 10-18. *P. juniperi* n. sp. (10-17, female; 18, male). 10. Lateral view. 11. Dorsal view. 12. Leg I. 13. Leg II. 14. Empodium, enlarged. 15. Coxigenital region. 16. Detail of microtubercles on lateral surface. 17. Internal genitalia. 18. Coxigenital region.

Legs: With all usual segments and setae. Legs I 25 (22-25), femora seven (7-8), femoral setae (*bv*) nine (9-11), genua five (4-5), genual setae (*l'*) 21 (20-24),

tibiae six (5-6), tibial setae (*l'*) eight (6-8), tarsi six (5-6), inner fastigial setae (*ft'*) 17 (16-18), outer fastigial setae (*ft''*) 19 (19-20), ventromesal setae (*u'*)

5, solenidia five (5–7), not knobbed, empodia seven (7–8), five-rayed. Legs II 24 (22–24), femora seven (6–8), femoral setae (*bv*) eight (7–8), genua 4, genual setae (*l'*) 11 (8–10), tibiae 5, tarsi six (5–6), inner fastigial setae (*ft'*) five (5–8), outer fastigial setae (*ft''*) 19 (18–21), ventromesal setae (*u'*) five (4–5), solenidia 8, not knobbed, empodia seven (7–8), five-rayed as in leg I. Coxae: Coxae as in female. Coxal setae *1b* seven (7–8), seven (7–8) apart, coxal setae *1a* 13 (13–22), eight (6–9) apart, coxal setae *2a* 30 (31–37), 22 (19–22) apart. Coxisternal area with seven (6–8) microtuberculated annuli. Genitalia: 15 (15–17), 18 (17–21) wide. Coxal setae *3a* 22 (26–27), 15 (13–16) apart. Opisthosoma: As in female. Setae *c2* 20 (21–22), 44 (42–45) apart, on annulus one (1–2), setae *d* 37 (37–43), 28 (25–28) apart, on annulus 11 (11–12), setae *e* 39 (36–40) long, 15 (15–17) apart, on annulus 25 (25–28), setae *f* 13 (13–17), 15 (15–16) apart, on annulus 43 (42–48). Total dorsal annuli 53 (55–60), total ventral annuli 48 (46–52) microtuberculated as in female. Setae *h2* 32 (27–32), eight apart, setae *h1* three (3–4), six apart.

Taxonomic Notes—Diagnosis. *P. juniperi* sp. nov. is easily distinguished by the characteristic lobe, which is unique among the other species of the genus.

Type Material. Holotype female, nine female paratypes, allotype male, and four male paratypes collected from *Juniperus oxycedrus* L. at Santa Maria of Paros Island (Greece) by the last author on 9-VII-99; nine female and five male paratypes collected from *Juniperus oxycedrus* L. in Simos Ioannidis, Florina Prefecture (Greece) by the first author on 26-V-99; eight female and one male paratypes collected from *J. oxycedrus* at Karyes, Messinia Prefecture (Greece) by the first author on 6-VI-99; three female and four male paratypes from *J. oxycedrus* at Kampos Despoti, Trikala Prefecture (Greece) by the first author on 30-VIII-99; one male paratype from *J. oxycedrus* at Megalo Peristeri, Ioannina Prefecture, by the first author on 30-VIII-99 and 11 female paratypes at Kato Trikala, Korinthia Prefecture (Greece) by Eleftheria Kapaxidi, a Ph.D. student at the Laboratory of Agricultural Zoology and Entomology of the Agricultural University of Athens, on 3-III-00. Nineteen female and six male paratypes collected from *Juniperus communis*

L. at Golubac, Divčibare plateau (Serbia) by the second author on 1-VIII-00; six female paratypes collected from *J. communis* at Mt. Goč (Serbia) by the second author on 28-VIII-01, and 22 female and two male paratypes collected from *J. communis* at Ježevica, Požega (Serbia) by D. Smiljanić; on 14-X-01. Holotype and paratypes are deposited in the Acari Collection, Department of Agricultural Zoology and Entomology, Agricultural University of Athens, Greece; paratypes from Serbia are deposited in the Acari Collection, Department of Entomology, Faculty of Agriculture, University of Belgrade, Serbia and Montenegro. One female paratype each at the British Museum, London, England, and the National Museum, Washington, DC.

Relationship to Host Plant. *P. juniperi* n. sp. was found in the needles of *J. oxycedrus* and *J. communis* as vagrants.

Etymology. The name of the species is derived from the generic name of the host plant.

Acknowledgments

We thank the State Scholarships Foundation who supported this study. We also want to thank R. Ochoa for kindly lending us Keifer's paratypes.

References Cited

- Baker, E. W., T. Kono, J. W. Amrine, Jr., M. Delfinado-Baker, and T. A. Stasny. 1996. Eriophyoid mites of the United States. Indira Publishing House, West Bloomfield, MI.
- Keifer, H. H. 1938. Eriophyid Studies II. Bull. Calif. Dep. Agric. 27: 301–323.
- Keifer, H. H. 1942. Eriophyid Studies XII. Bull. Calif. Dep. Agric. 31: 117–129.
- Keifer, H. H. 1952. The eriophyid mites of California (Acarina: Eriophyidae). Bull. Calif. Insect Surv. 2: 1–123.
- Lindquist, E. E. 1996. External anatomy and notation of structures, pp. 3–31. In E. E. Lindquist, M. W. Sabelis, and J. Bruin [eds.], Eriophyoid mites – their biology, natural enemies and control. Elsevier, Amsterdam, The Netherlands.

Received 20 September 2003; accepted 26 April 2004.